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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,344	02/11/2002	Norbert Nicolai	37998-177952	9936

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EXAMINER

WARREN, DAVID S

ART UNIT PAPER NUMBER

2837

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,344

Applicant(s)

NICOLAI ET AL.

Examiner

David S. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16 and 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16 and 18-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

All claims stand rejected:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 16, 18 – 21, 23 – 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs in view of Stricker et al. (5,670,235). Regarding claim 16, Fuchs shows a micro-perforated sheet absorber having a proportion of hole area of 1.03%, a perforation hole diameter of 0.1 – 2.0 mm, and inter-hole distances of 2 – 20 mm. All of these values lie within the ranges claimed by the applicant. Fuchs also discloses a “non-woven absorber” (col. 4, lines 38 – 40; i.e., where the reinforcements that prevent the sound from exciting the panels into vibration, are considered to “absorb” sound). Regarding claim 18, Fuchs shows a 1.03% hole area proportion. Regarding claim 19, the Fuchs range (0.1 to 2.0 mm) includes both of applicant’s claimed ranges. Regarding claim 20, Fuchs discloses the possibility of using plural perforated sheets (col. 4, lines 34-35). Fuchs also discloses using different hole parameters (e.g., diameters, distances therebetween, etc.) to adjust to a desired sound frequency to be attenuated. This implies the use of multiple panels with different parameters for multiple frequency attenuation. Regarding claim 21, Fuchs discloses the 1.03% hole proportion with a hole diameter of 0.16 mm and inter-perforation distance of

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1.4 mm apart. By increasing the hole diameter by a factor of 1.414 (i.e., the square root of two) to 0.22 mm (which is within the range disclosed by Fuchs) the hole proportion will double to 2.06% which meets the applicant's limitation of claim 21. Regarding claim 23, the applicant appears to be claiming all possibilities of hole distribution – “homogeneous” or “concentrated in areas” – the examiner is interpreting this to mean “either homogeneous or non-homogeneous.” While the Fuchs reference is silent as to hole distribution, it *must* have either a homogeneous or non-homogeneous hole distribution (since no other possibilities exist), therefore the Fuchs reference meets this limitation. Regarding claim 24, Fuchs discloses a perforated sheet thickness of 0.2 to 30 mm. Regarding claim 26, Fuchs discloses the use of perforated sheets made of either glass or plexiglass (i.e., plastic). Regarding claim 27, Fuchs discloses the use of “glued on strips” which are interpreted to be “multiple layers,” also Fuchs teaches the use of using multiple sheets. Regarding claims 28 - 30, Fuchs shows the use of using “several” (i.e., 3 or more) and the use of using multiple spacing configurations (e.g., planar – where the mutual distance is constant) and (e.g., slanted – where the mutual distance is different). Fuchs also discloses that the distance of the perforated sheet from the surface should be chosen in accordance with the frequencies that need to be attenuated. Regarding claim 34, see Fuchs' fig. 5. However, Fuchs does not teach using the sound-absorbing article in a vehicle (e.g., door linings, passenger compartment linings, trunk linings, roof linings, etc.). Stricker discloses the use of sound-absorbing vehicle linings (see Stricker's title and col. 3, line 49). It would have been obvious to one of ordinary skill in the art to combine the teachings of Fuchs and

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Stricker to obtain perforated sheet used to attenuate sound within a vehicle. The motivation for making this combination is found in Stricker, who also anticipates applicant's invention (see the following paragraph). Further motivation is that it is extremely well-known and desirable to attenuate noise within a motor vehicle – as is taught by Stricker.

2. Claims 16, 18, 22, 30, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Stricker et al. (5,670,235). Regarding claims 16 and 18, Stricker shows the use of a perforated sheet used to attenuate sound having hole parameters that lie within the ranges as claimed by the applicant (col. 3, lines 51 – 60) i.e., a hole diameter range of 1 to 3 mm, hole spacing range of 5 – 30 mm, and proportion of holes ranging from 0.3 – 8%. Regarding claims 17 and 31-33, Stricker teaches the use of using the sound absorber as an internal frame lining for motor vehicles (col. 1, line 11).

Regarding claim 22, the largest diameter for a perforation in the Stricker disclosure is 3 mm, which is equivalent to an area of 7.07 mm^2 (within the range claimed by applicant).

Regarding claim 30, Stricker discloses that the perforations are “zoned” (col. 3, line 33) this is equivalent to varying inter-hole distances. Stricker also shows that the perforations may have “random” shapes (col. 3, line 55), this is considered to have “varying diameters.” Stricker also discloses that the sound-absorbing sheet may have added layers where “sound absorption is important” (col. 3, lines 65-67), thus, Stricker teaches a varying thickness “over the element.”

Response to Arguments

Applicant's arguments filed September 11, 2003 have been fully considered but they are not persuasive. The applicant argues that it is "self-understanding that the sound-absorbing in a glass building component or synthetic glass building component is quite different from the frequencies to be absorbed in a vehicle." The examiner does not concur. It is desirable to attenuate environmental noise, whether within a building or vehicle. The applicant argues that Fuchs absorbs sound within the frequency range of 125 – 1250 Hz. The overlapping range of Fuchs anticipates the applicant's range of 500 – 5000 Hz. Regarding applicant's remarks pertaining to "a wall distance of 10 to 20 mm," this limitation is not claimed therefore these arguments are moot. Regarding applicant's allegation that Stricker's "perforations of the support layer do not appear to act for sound absorption purposes" – Stricker states (col. 3, lines 33 and 34), "[t]hese perforations are preferably used for sound absorbtion purposes [emphasis added]. The applicant argues that the Stricker laminate "does not have any distance to the metal sheet of the car and thus, would also be unsuitable to absorb the sound in the frequency area of between 500 to 5000 Hz." The examiner agrees. However, claim 34 (which contains the 500 – 5000 Hz limitation) was not rejected using Stricker's teachings – therefore this argument is moot. Furthermore, the perforated layer of Stricker is separated from the wall of the vehicle by layer 4, some distance is therefore inherent.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Warren whose telephone number is 703-308-5234. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

dsw


ROBERT NAPPI
SUPERVISORY PATENT EXAMINER